Summary: As COVID-19 cases surge and vaccination becomes more and more crucial in ending the pandemic vaccination centers play a key role in the immunization of the population. The Vaccination Center Routing Service has been created as part of the Openrouteservice. This free service aims to help people find their assigned vaccination center and provide the most efficient route possible. As well as providing the routing service HeiGIT researchers performed an isochrone analysis for Germany highlighting regions and federal states where vaccination center distribution leads to relatively large travel distances for a significant part of the population.

The Problem (a):
- Distribution of vaccination centers differs from population distribution (Fig. 1)
- Travel estimations can not rely on euclidean distance but need to incorporate the road network

The Problem (b):
- Appointments for vaccination are currently not always made at the closest vaccination facility
- People may not know how to get to their assigned vaccination center or need help with assisting the elderly to get to theirs

Figure 1: Accessibility of COVID-19 vaccination centers in Germany based on isochrones calculated by the openrouteservice. Accessibility was calculated using the federal state borders as hard boundaries. Sources: Vaccination centers and road network: © OpenStreetMap contributors. Administrative boundaries: © GeoBasis-DE / BKG 2014, http://www.bkg.bund.de
The Solution: Vaccination Center Routing Service

- Uses the openrouteservice to identify the route from a chosen location or address to the closest vaccination center
- Searching progressively from the lowest administration levels to the higher ones
- Route calculation
- Additional information about the target vaccination center e.g. contact details, phone, website and opening hours

The User:
- Individuals
- Health department employees
- News agencies informing about accessibility

Figure 2: Example of the vaccination center routing.